

Notice of Allowability

Application No.

09/880,801

Examiner

Ling-Siu Choi

Applicant(s)

CHEN ET AL.

Art Unit

1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the Amendment filed 01/18/2005.
2. ☒ The allowed claim(s) is/are 1, 4-9, and 23-25.
3. ☒ The drawings filed on 15 June 2001 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

DETAILED ACTION

1. This Office is in response to the Amendment filed January 18, 2005. Claims 2-3 and 10-22 were canceled and claims 1, 4-9 and 23-25 are now pending.

Allowable Subject Matter

2. Claims 1, 4-9 and 23-25 are allowed.
3. The following is an examiner's statement of reasons for allowance:

The present claims are allowable over the closest references: Arai (US 6,013,168), Chiem et al. (1997) [Anal. Chem. 69, 373-378(1997)], Chiem et al. (1998) [Clinical Chemistry, 44(3), 591-598(1998)], Seiler et al. (1993) [Anal. Chem. 65, 1481-1488(1993)], Seiler et al. (1994) [Anal. Chem. 66, 3485-3491(1994)], and Jacobson et al. [Anal. Chem. 67, 2059-2063 (1995)].

A sample analysis system with chip-based electrophoresis device, comprising		
1	an auto-sampling device	for loading and introducing a sample into a channel, wherein the auto-sampling device is a flow-based auto-sampling device driven by dynamic force , and the auto-sampling device comprises the continuous mode and the discrete mode of sample introduction
2	a chip	for loading and separation of the sample, wherein the chip comprises at least one sample loading channel, at least one separation channel, and at least one connection channel for connecting the sample loading channel and the separation channel
3	a power supplier	for providing electric voltage to separate the sample
4	a detecting unit	for detecting the signal generated by the sample
5	a signal collecting unit	for collecting the sample signal
6	a signal processing unit	for outputting the signal

(summary of claim 1)

Arai discloses a microchip electrophoresis apparatus comprising (a) a liquid injection mechanism for injecting a buffer solution, (b) a sample injection mechanism for injecting sample, (c) a power source for **switching and applying a sample introduction voltage** for introducing the sample from a sample introduction passage into a separation passage and a separation voltage for electrophoretically separating the sample, and (d) a detector for optically detecting electrophoretically separated sample (claim 1). Arai further discloses that the optical signal detected by the detector (photomultiplier) is amplified and then converted to a digital signal by A-D converter, which is outputted to a CPU (col. 2, lines 35-38). However, Arai does not teach or fairly suggest a microchip electrophoresis apparatus comprising a **flow-based auto-**

sampling device being driven by **dynamic force** and comprising the continuous mode and the discrete mode of sample introduction.

Chiem et al. (1997) disclose a microchip capillary electrophoresis device comprising (a) a computer-controlled power supply, (b) an argon ion laser for a laser-induced fluorescence, (c) a photomultiplier tube as a detector, (d) an injector for a sample (double T injector), and (e) a computer for recording a filtered signal (page 375). However, Chiem et al. do not teach or fairly suggest a microchip electrophoresis apparatus comprising a **flow-based auto-sampling device** being driven by **dynamic force** and comprising the continuous mode and the discrete mode of sample introduction.

Chiem et al. (1998) disclose a glass microchip for immunoassay, comprising (a) an injector (double T injector), (b) a computer-controlled power supply, (c) separation channel, (d) a laser-induced fluorescence, (e) a photomultiplier tube as a detector, and (f) a computer (second column of pages 592; Figures 1-2; first column of page 593). However, Chiem et al. do not teach or fairly suggest a microchip electrophoresis apparatus comprising a **flow-based auto-sampling device** being driven by **dynamic force** and comprising the continuous mode and the discrete mode of sample introduction.

Seiler et al.'93 disclose a planar glass chip for capillary electrophoresis, comprising a power supply, migration channel, a syringe, an argon ion laser, PMT, and a computer (second column of page 1482; column 1 of page 1483). However, Seiler et al.'93 do not teach or fairly suggest a microchip electrophoresis apparatus comprising a **flow-based auto-sampling device** being driven by **dynamic force** and comprising the continuous mode and the discrete mode of sample introduction.

Seiler et al.'94 disclose a glass chip comprising (a) a manifold of capillaries, (b) a computer-controlled system for applying and switching the potential, (c) an argon ion laser, (d) a photomultiplier tube, (e) a program for data acquisition, and (f) an injector (page 3485-3486). However, Seiler et al.'94 do not teach or fairly suggest a microchip electrophoresis apparatus comprising a **flow-based auto-sampling device** being driven by **dynamic force** and comprising the continuous mode and the discrete mode of sample introduction.

Jacobson et al. disclose a fused quartz microchip for performing capillary electrophoresis, comprising (a) a column, (b) a detector for laser-induced fluorescence, (c) a data acquisition, and (d) an injector (page 2060). However, Jacobson et al. do not teach or fairly suggest a microchip electrophoresis apparatus comprising a **flow-based auto-sampling device** being driven by **dynamic force** and comprising the continuous mode and the discrete mode of sample introduction.

In light of the above discussion, it is evident as to why the present claims are patentable over the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

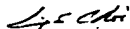
Conclusion

4. Any inquiry concerning this communication or earlier communications from the

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examiner should be directed to Ling-Siu Choi whose telephone number is 571-272-1098.

If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reach on 571-272-1114.



LING-SUI CHOI
PRIMARY EXAMINER

April 15, 2005